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Title : A/D CONVERTING APPARATUS

2.CLAIMS

An A/D converting apparatus comprising:

adding means for inputting an analog input signal and a white noise signal, adding a white noise signal having a predetermined band, which is higher than that of said analog input signal, to said analog input signal;

sample hold means for over-sampling the output of said adding means;

A/D converting means for converting the output of said sample hold means into the digital data; and

low band pass filter means for deleting said white noise signal component from the digital data from said A/D converting means.

The above sample-held signal is converted into the digital data by an A/D converting circuit DT_1. In this data, as shown by a diagonal line in FIG. 2g, a white noise resulting from a nonlinear property of the A/D converting circuit DT_1 is added. This data is latched by a latch circuit L, then, as shown in FIG. 2h, the data of the white noise signal component,

of which frequency is not less than f d_{max}, is deleted by a low band pass filter LF_2. This signal is skipped by a decimation circuit DS, so that the digital data having a frequency spectrum at a sampling rate by the frequency f_s as shown in FIG. 2i is obtained.

FIG. 1 is a block diagram for illustrating an embodiment according to the present invention.

FIG. 1

ANALOG INPUT SIGNAL

LF_1: BAND PASS FILTER

SH: SAMPLE-HOLD CIRCUIT

DT_1: A/D CONVERTING CIRCUIT

L: LATCH CIRCUIT

HF: HIGH BAND PASS FILTER

NG: WHITE NOISE GENERATING CIRCUIT

LF_1: LOW BAND PASS FILTER

DS: DECIMATION CIRCUIT